

PATENT  
Attorney Docket No. 07191.8054  
(AlliedSignal Docket No. 30-3986 DIVI (CPA))

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Clemmer et al

Serial No.: 08/959,748

Examiner: A. Pryor

Filing Date: October 28, 1997

Art Unit: 1616

For: Process for Production of  
Difluoromethane

Assistant Commissioner for Patents  
Washington D.C. 20231



DECLARATION UNDER 37 C.F.R. 1.131

Sir:

We, Paul Gene Clemmer, Addison Miles Smith, Hsueh Sung Tung and John Stephen Bass, declare:

1. That we are the named inventors of the subject matter of Patent Application Serial No. 08/959,748 filed October 28, 1997 (the "Application").
2. That this declaration is being submitted to establish conception and reduction to practice of the invention in the Application prior to September 29, 1994, the publication date of International Publication WO 94/21579.
3. That to establish conception of the Applicants' claimed invention, we attach as Exhibit "A" hereto a Monthly Status Report, with dates and non-pertinent subject matter redacted, that was prepared prior to September 29, 1994. Exhibit "A" evidences conception in the United States prior to September 29, 1994 of a process for the production of difluoromethane comprising (a) contacting dichloromethane with hydrogen fluoride in the presence of a fluorination catalyst to produce a product stream comprising difluoromethane, monochloromonofluoromethane and unreacted starting materials and (b) separating difluoromethane from the product stream of step (a), wherein sufficient hydrogen

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fluoride is employed in the process such that during step (b) the molar ratio of hydrogen fluoride to monochloromonofluoromethane is at least about 100:1 (the "Process"). The report further indicates that HFC-32 (difluoromethane) production with recycle was to be performed before September 29, 1994.

4. That to establish reduction to practice of the Process, we attach as Exhibit "B" hereto a print-out of an on-line gas chromatograph, with dates and non-pertinent subject matter redacted, that was prepared contemporaneously with operation of the Process described in Exhibit "A", which operation occurred prior to September 29, 1994. Exhibit B demonstrates that the process successfully produced HFC-32 in accordance with the flow diagram shown in Exhibit A.

5. That to further establish reduction to practice of the Process, we attach as Exhibit "C" hereto a lab pilot plant data log, with dates and non-pertinent subject matter redacted, that was prepared contemporaneously with operation of the Process described in Exhibit "A," and which was prepared prior to September 29, 1994. Exhibit "C" evidences, *inter alia*, the hydrogen fluoride feed rate and recycle pump settings recorded contemporaneously with operation of the Process described in Exhibit "A".

6. That to further establish reduction to practice of the Process, we attach as Exhibit "D" hereto a spreadsheet prepared by Paul Clemmer that presents data extracted from Exhibits "B" and "C" in a form that evidences that sufficient hydrogen fluoride is employed in the Process described in Exhibit "A" and operated as demonstrated above, such that during step (b) the molar ratio of hydrogen fluoride to monochloromonofluoromethane is at least about 100:1. This ratio was not surprising to us because our objective, which we achieved, was to maximize catalyst activity and conversion of methylene chloride to difluoromethane, and thus the ratio of desired product difluoromethane relative to monochloromonofluoromethane.

The undersigned declare that all statements made herein are true and that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or

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imprisonment, or both, under Section 1001 Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

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